



Aalborg Universitet

AALBORG UNIVERSITY
DENMARK

Innovations and Experience Economy

a tool for rural food sector competitiveness and rural development

Arthur, Isaac Kwamena

Publication date:
2008

Document Version
Publisher's PDF, also known as Version of record

[Link to publication from Aalborg University](#)

Citation for published version (APA):

Arthur, I. K. (2008). *Innovations and Experience Economy: a tool for rural food sector competitiveness and rural development*. Paper presented at Regional Studies Association Regions: The Dilemmas of Integration and Competition, Prag, Czech Republic.

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal -

Take down policy

If you believe that this document breaches copyright please contact us at vbn@aub.aau.dk providing details, and we will remove access to the work immediately and investigate your claim.

Regional Studies Association
Regions: The Dilemmas of Integration and Competition
27th -29th May 2008. Prague, Czech Republic

Innovations and Experience Economy: A tool for rural food sector competitiveness and rural development?

Paper by

Isaac Kwamena Arthur
Department of Development and Planning
Aalborg University
Fibigerstraede 13, 9220 Aalborg, Denmark
Telephone: 0045- 9940 9055
Email: ikarthur@plan.aau.dk



This paper is partly sponsored by the European Union through the European Social Fund.

1. Introduction

This paper is part of an on-going research which seeks to conceptualise the experience economy concept as innovation strategy to enhance competitiveness of the rural food sector and also contribute to rural development. In doing that, the paper seeks to draw lessons from theoretical insights of the innovation concept. Lessons to be drawn will serve as a framework for analyses in a future paper on the introduction of the experience economy as possible innovation strategy for the rural food sector. The rural food sector is defined here as collection of firms engaged in adding value to food products through processing, manufacturing and packaging. The fundamental questions for this paper is: what is innovation and how can it be useful source of competitive advantage for rural food firms?

The paper takes its motivation from recent global shifting of “consumer preferences” in food consumption (Regmi, 2001:1), and also the demand for experience products. According to Pine & Gilmore (1998) economies have evolved from agrarian to industrial, advanced into service provision and currently to an era of experience economy (p.97)¹. The experience economy is viewed as new approach to business, where by firms attach “memorable experience” to their offerings which aims at engulfing consumers in an intrinsic manner (ibid.:98) and to generate higher economic value. It is also considered as a new ideological era in economic development inspired by “people’s search for identity and involvement in an increasingly rich society” (Lorentzen, et al. 2007: 2). Such identity search is evident by people’s demand and consumption of experience products, which is reciprocated by firms through the designs and publicising of experiences (Pine & Gilmore 1998:98; Hayes & MacLeod, 2006:45). Rural food firms would therefore have to respond to meet these challenges. However, will the introduction of experience economy be an innovation to enhance the food sector’s competitiveness?

Large firms which are predominantly urban are able to compete easily due to their capability to finance technological changes, easy access to research and development, research institutions among other forms of infrastructure than their rural counterparts. This raises an interest to ascertain how the rural food industries which are predominantly small in sizes could address these challenges and to compete. The issue of competition is critical for rural areas as they are challenged with problems such as “small local markets, isolation from larger markets, and remoteness from the business mainstream” (Baker, et al. 2007:183). The need for greater market attraction to rural areas therefore becomes imperative. In this regard, can innovation be an opportunity for rural firms to attain competitive advantage?

Authors such as Edquist (1997); Lundvall (1992); Morgan (1997); Murdoch (2000) have highlighted on a generally held perception that “economic performance of firms, organisations, industries and economic regions is based on the capacity to innovate” (Nordic Innovation Centre, 2005:1). Innovation is viewed as an endeavour “to create competitive advantage by perceiving or discovering new better ways of competing in an industry and bringing them to market” (Porter 1990, p.45; cf. Simmie, 2006: 165). Based on this perception, I conceive innovation as significant input for firms to stay “competitive or pursue long term advantages” (Hamel, 1998; Roberts, 1998; as in Darroch & McNaughton, 2002:210). Competition serves as driving force for firms to become “technologically and organisationally creative” (Essletzbichler & Winther, 1999:179). This could be substantiated by Drucker (1998)’s assertion that innovation is important due to the “intense competition, along with fast changing markets and technologies” (p.149). Armbruster, et al (2006) also argues that the proliferation of global competition has compelled firms to hunt for alternative innovative avenues to preserve their competitiveness as the creation of sophisticated

¹ See Pine & Gilmore (1998, 1999) for more understanding of the experience economy concept.

product technologies is no longer adequate to endure in competition (p.26). In this sense, can the adoption of experience economy be a non-sophisticated technological innovative approach to compete and also preserve competitiveness?

In the attempt to understand possible ways to address prevailing challenges of the rural food sector and rural areas; the concepts of innovation is examined in regards to the paper's fundamental question. One may consider some of the literature accessed as prescriptive, biased, subjective, and diverse in views. Yet, they are all considered as important sources of information to help in developing a conceptual framework to serve as a guide for empirical study. The paper is organised as follows: In section 2, the meanings of innovation are discussed. In section 3, the types of innovation are presented. The sources of innovation are presented in section 4. Section 5 also presents networks of innovation. The sectoral system of innovation is discussed in section 6. In section 7, the regional system of innovations is discussed. Discussions in the above sections are aimed to obtain basic knowledge of innovation and how they actually work. Section 8, is devoted to look into how innovations work in a firm. This is done by conceptualising activities within a firm's value chain as ways in which innovations could work in a firm. Section 9, concludes the paper.

2. What is Innovation?

The concept of innovation is subject to different schools of thoughts and interpretations, although there are some commonly held conceptions of innovations. Damanpour, *et al.* (1989) consider innovation as multifaceted creation since its implementation is influenced by differences in personal, institutional, and relative issues (587). Plethora of literature indicates the lack common definition for innovation (e.g. Baker & Hamann, 2007:10; Rabe, 2006:10). This is indicative of divergent views on defining innovation. Despite these differences, OECD (2005) claims there is a general acceptance of innovation as central to "the growth of output and productivity" (p.10). This claim could be understood economically since innovation is usually referred to as vital component of growth for economies (Freeman & Soete, 1997; cf. Darroch & McNaughton, 2002:210; Toumi, 2006:9).

Prior to knowing what innovations is about, there is a need to distinguish it from invention. There are occasional problems of distinguishing between innovation and invention since they are almost related (Fagerberg, 2005:4). According to Fagerberg (2005) invention is considered as the initial thought of "an idea for a new product or process", and innovation is the initial "attempt to carry it out into practice" (p.4). The difference between invention and innovation could be summarised as an issue of thought for the former and attempted action for the latter. However, an invention becomes innovation when "it succeeds in the marketplace" (Ulijn & Brown, 2004: 2).

Joseph Schumpeter is known to have defined innovation broadly as "new combinations" (Edquist, 1997:11, Hagedoorn, 1999:885; Sundbo, 2003: 98). That is:

"the introduction of a new product or a new quality of a product, a new method of production, a new market, a new source of supply of raw materials or half-manufactured goods, and finally implementing the new organization of any industry" (Hagedoorn, 1999:885-886; Heertje, 2006:14).

This definition characterises innovation as "new" things/activities embedded with multiple aspects of firms operations, hence offering broader understanding of innovation. Indeed, the notion of innovation has been widely associated with new activities in many literatures including (Trail & Grunert, 1998; Damanpour, et al. 1989). My understanding of this notion is that innovation is a concept of change. However, what is crucial to understand is the extent to which

implementation of new activities as innovation can be identified as new to firms or consumers (market). More so, how is innovation created and utilised by firms to compete?

Gjerding & Rasmussen (2007) also defines innovation narrowly as “changes in technical solutions associated with products, production processes or service provision”. However, they recognise the commonly usage of innovation as associated with “product, process, service, market, financial and industrial innovation” as conceived in the 1934 work of Schumpeter (p.2). Invariable, the term technical change is subjected to different notions. One school of thought views it as being an outcome of “seeking to maximise profits” (Edquist, 1997: 8). Alternatively, Nelson and Winter perceive it as “evolutionary process” (Nelson & Winter, 1997, 1982; Nelson, 1987, 1995b; as in Edquist, 1997: 8). Nelson (1987) clarifies technical changes as evolutionary process on the premise that innovators consistently produce things which are advanced to what exist already (Edquist, 1997: 8). In this sense, innovation is understood as continuous process involving different activities which results in the advancement of existing things.

According to Rabe (2006) many people have narrowed the definition of innovation to “ways to come out with new technology products”. She debunks this definition as being very ordinary and to a greater extent limited in scope (p.11). It is a simplistic definition in this regard. She argues that innovations always take place in all business operations “from manufacturing and marketing to customer service and finance. It goes beyond this reach into other areas such as “marketing, retailing, advertising as well as non-business fields” (ibid).

Rabe (2006) defines innovation as “the application of an idea that results in a valuable improvement” (p.12). Nevertheless, this definition has been disputed as being “too broad” (ibid.). Critics of this definition emphasise that innovation has to be within the precincts of “dramatic, disruptive, revolutionary improvement, not for evolutionary upgrades or simple modification”. Yet, Rabe is resolute to her claims and affirms that simple changes may occasionally have major effects; “and whether a change is modest or dramatic is somewhat subjective” (ibid.). This is substantiated by the fact that what is perceived as “innovative” or new to some people are actually not to other people. It is therefore the customer who makes the difference (p.13).

Edquist (1997) considers Nelson & Rosenberg (1993)’s view of innovation as “narrow” for being limited to “technical innovations” (p.11). Edquist identified that none of the contributors in Nelson’s book did discuss “organisational, institutional, or social innovation in any detail” (ibid.). This comment implies innovation must be defined to encompass different aspects of business activities and not limited to a particular aspect. Limiting the definition of innovation to technical changes is not too popular in some quarters as identified so far. In my view, innovation could be linked with technical changes when it solely has to with technical issues, but it is useful to define innovation generally in a broader context to encompass both technical and non-technical changes.

In the quest to delimit the discussions of innovation from technical innovation to embody other broader forms; Edquist (1997) note’s Schumpeter’s other definition of innovation with added emphasis as:

“the production function... this function describes the way in which quantity of product varies in qualities of factor vary. If, instead of quantities of factors, we vary the form of the function, we have an innovation (Schumpeter, 1939:87; as in Edquist, 1997:11).

At least Schumpeter’s consideration of innovation spares one from understanding innovation in only technical context. However, Hagedoorn (1999) subjects all of Schumpeter’s definitions of innovation to criticism; describing them as “broad and vague, reflecting his ‘struggle’ to understand the complexities of technological development” (p.885). The basic reason behind the

criticism of Schumpeter's definitions is due to their limitations to "new firms and new entrepreneurs" (ibid.).

Toumi (2006) argues that innovations materialise in multifaceted repetitive procedure where "communication, learning and social interaction play important roles" (p.8). This idea refers to a social approach to the understanding of innovation. In this regard, innovation is defined "as something that generates and facilitates change in social practice" (Toumi 2006:10). However, Toumi's conception is largely limited to the influence of social practices on product and process innovations; hence indicative of a narrow approach in viewing innovation. The issue is whether innovations occur in only products and processes of a firm's operations?

Sundbo (2003) also views innovation from a social dimension, and therefore defines "innovation as social process". He argues that "the social process is reflexive", and therefore central to how firms develop strategies to compete. That is how workers and management think about ways to elude:

"the external threats from competitors, changes in customer preferences and political regulation, and further, how the firm could utilise the possibilities for new market positioning [e.g. marketing new products or decreasing prices through process innovations]" (Sundbo, 2003: .98).

Jon Sundbo's views on the social facet of innovation are much useful for one to understand the rationale and endogenous interactive processes through which firms' innovate. Even though he recognises the possibility of examining a firm's innovative actions exogenously, his emphasis is more on "innovative process", i.e. the "interaction between managers and employees" to compete (ibid.). With reference to (Freeman, 1986; Kline and Rosenberg, 1986; Lundvall, 1988; Vinding, 2002); Jensen, et al., (2007) also observe recent emphasis on innovations are placed on "interactive process" involving "firms, customers, suppliers and knowledge institutions" (pp.680-681). This shows that interactive process in innovation is a double-edged sword, i.e. both endogenous and exogenous. By virtue of the interactive nature of innovation creation, innovation could be characterised as largely socially constructed.

So far innovation has been identified from broad and narrow perspectives; hence, implying different contextual conceptions of the concept. However, they are vital to changes in economic processes and activities of firms to achieve specific set goals. In other words, innovation is about introducing new operational rationality to effect change to benefit firms.

According to Edquist (1997), even though definitions for innovation vary, it is not essentially an issue given the fact that "definitions and analytical distinctions are not right or wrong" (p.12). It is rather useful to consider the issue under investigation which is to "influence the conceptual specification" (ibid.). In this regard, the attempt to understanding innovation as source of competitive advantage for rural food firms has to be influenced by a specific conceptual definition of innovation. Though many useful lessons have been learnt from all the above definitions of innovation, the conceptualisation of innovation in this paper is central to competitive advantage. According to Metcalfe (2005), competitive advantage via innovation strategies can be perceived as "evolutionary process and not a state of equilibrium" (p. 61). In this regard, innovation is about a changing process crucial to various activities of firms which can lead to competitive advantage. This raises a question as to how innovation could be developed from a firm's value chain in order to achieve competitive advantage.

The conceptualisation of innovation in this paper is inspired by Michael Porter's notion, which is central to competitive advantage². Hence he defines innovation as an endeavour "to create competitive advantage by perceiving or discovering new better ways of competing in an industry and bringing them to market" (Porter 1990, p.45; cf. Simmie, 2006: 165). This is made evident through "product changes, process changes, new approach to marketing, new forms of distribution, and new conceptions of scope" (Porter, 1990: 45). Porter's definition is also broad, but implies that innovation is a function of competitive advantage. Therefore, firms' have to "create" innovations which will serve as leverage for competitiveness (Porter, 1990:554). This may justify why rural food firms will have to create innovations such as attaching experiences to new offerings³ to customers in order to distinguish themselves from other competitors. In my estimation, this approach is just an option to compete but, it all depends on how it may be executed to achieve appreciable competitiveness.

With Porter's definition in mind; will the introduction of experience offerings in the food sector be tantamount to innovation? Can experience offerings in the rural food sector be accepted to consumers as new or innovation? Will the competitiveness of rural food sector be enough to boost rural development and promote the identity of rural areas? These are issues worth knowing for one's understanding.

The interesting thing about Porter's definition is the issue of industry introducing new competitive ways to the market. This offers an understanding that innovation is very critical to the market. Thus innovative ideas have to be new on the market and also to serve as leverage for firms to compete. Porter's definition appears useful to a greater degree since it helps to understand why firms engage in innovations to compete. Innovation is therefore conceived as a source of competitive advantage in this paper which may be useful for rural food firms. However, for the sake of the fundamental question of this paper, it is useful to understand other perspectives of innovation.

3. Types of Innovations

The following outlines the different types of innovation and their impact on the firm and market.

Product Innovation

Product innovation is defined by Armbruster, et al (2006) as "the development of new product or technologies supported by research and development activities of the company". This definition is contextually narrow in regards to its limits on a firm's introduction of new products via research and development. The issue is whether all product innovation emerges from research and development or not? Fagerberg (2005) argues that some key innovations emerge from scientific research but that is not always the case. He points out that firms usually innovate due to their conviction in the "commercial need for it"; and normally begin by "reviewing and combing existing knowledge". The choice of research rather emerges when the former fails (p.9). This indicates that product innovation may either emerge from a producer's initiative and not solely from research and development. However, I wish to challenge the conception that research and development emerges as substitute to producers failed attempt to innovate. I presume innovation is a choice for a producer depending on market needs, existing knowledge, capabilities and enabling environment. Therefore product innovation would not necessarily take place only when producers have failed to innovate through scientific research.

² See Porter (1985) for definition of competitive advantage.

³ This term is originally borrowed from Pine & Gilmore (1998, 1999) and it implies goods and services.

The OECD also defines product innovation as:

“the introduction of a good or service that is new or significantly improved with respect to its characteristics or intended uses. This includes significant improvement in technical satisfaction, components and material improvement in technical specification, components and materials, incorporated software, user friendliness or other functional characteristics” (OECD, 2005: 48)⁴.

This definition is largely central to the technical changes of a firm's product. Apart from the emphasis of this definition on the significant improvement of goods and services, the OECD also considers creation of new product with slight changes to its “technical specifications” as product innovation (ibid.). In this sense, product innovations are new goods or services. Yet, the OECD warns that changes in designs which do not include significant alterations on a product's functional features or designed uses are not product innovation (ibid.). Grunert et al. (1997) also consider a linkage of product innovation to new products but argue that the conception of innovation differs. Thus what one view's as innovation is considered as opposite to another. Hence they suggest the usefulness of differentiating three groups of actors who will consider a product as new. These actors are consumers, distributors and companies (p.4).⁵ Schumpeter (1934) defined product innovation as “the introduction of new good... or a new quality of a good” (Pianta, 2005: 572). Taking an inspiration from OECD (2005), Schumpeter's definition of product innovation is limited or narrow since it is skewed to new good, and not explicitly considering services as part of products. It should be recognised that some firms' products are actually services and not always the manufactured goods.

Process Innovation

Process innovation is defined as “the implementation of a new or significantly improved production or delivery method. This includes significant changes in techniques, equipment and/or software” (OECD, 2005:49). From a Schumpeterian perspective, process innovation is “the introduction of a new method of production.....or a new way of handling a commodity commercially” (Pianta, 2005: 572). Contextually, both definitions are the same since they are concern with new production methods. However, the OECD's views are much broader with respect to emphasis on significant improvement in production. Schumpeter's definition is central to introduction of new methods and not necessarily its impact as highlighted by the OECD. Grunert et al. (1997) argue from a perspective of cost reduction in developing “existing products” or to enhance the creation of “new products” (p.4). This view is made clear to distinguish product innovation from process innovation due to their complementary nature. In this regard, they define process innovation as:

“an investment into a company's skills, resources and competences, which allows the company to introduce cost savings changes in production process but also to introduce new technology which allows the production of a range of products quite different from existing one “ (Grunert, et al. 1997: 4-5).

Grunert et al. (1997) also refers technological innovation led research and development (R&D) to process innovation. This view could be understood as a way in which firms engage in R & D to obtain knowledge to improve upon their output delivery. It is understandable for firms to engage in cost saving changes and introduction of new technologies to improve upon existing products, but could these be the only benefits or rationale for companies to engage in process innovation.

⁴ See reference for more detailed explanations of product innovation

⁵ See reference for each actor's perception of new products and how they influence one another.

Pianta (2005) informs that process innovation results in superior competence in manufacturing, lowers labour cost and prices of products; hence fostering high demand for products (p.572). This implies that process innovation does not only improve technological capabilities of companies, but also results in labour cost savings and achieving possible market enlargement through price reduction and high demand.

Marketing Innovation

Marketing innovation is defined as “the implementation of new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing” (OECD, 2005: 49). The creation of “new marketing” strategies and “methods” are significant to the development of industries (Chen, 2006:101). This innovation approach is seen as introduction of a technique which is virtually new to a firm. The rationale for marketing innovation is to deal with consumer wants, creation of new markets with the intention of raising firm’s sales (OECD, 2005: 49). Hine & Carson (2007) also argues that marketing innovation in small business enterprises are motivated by many intrinsic issues around these enterprises. These issues are such as their inability to engage in comprehensive and expensive marketing programmes, and mostly lack of differentiation from other competitors (p.13).

As learnt so far, the rationale for marketing innovation could be regarded as competitive approach for firms to capture greater market share. Basically, it could be argued that all firms may engage in different forms of innovative activities to capture greater market share and therefore marketing innovation may not be the only one. However, it should be recognised that innovative marketing is very crucial to a firm’s success because it is a means to showcase products in order to achieve greater market share or business success.

The OECD also suggests that marketing innovation could be borrowed from another organisation, and implemented for both new and existing products (ibid. p.50). This suggestion appears to be valuable. However, Schumpeter argues that imitations in a particular industry results in the growth of that industry for some time, but this growth will be short-lived or reduced in the future as the innovation is used by many. This questions whether imitations could be a good approach for firms. Fagerberg (2005) emphasises, if imitators intend to become successful they have to improve upon the authentic innovation (p.15). This implies the OECD’s suggestion above may be useful when imitating firms improve upon what they imitate to become successful on the market.

Organisational Innovation

Like other types of innovation discussed above; organisational innovation is also about introduction of new operational activities by a firm. Organisational innovation is defined as “the implementation of new organisational method in the firm’s business practices, workplace organisation or external relations” (OECD, 2005: 51). This definition could confirm Hage (1999)’s assertion on consistency in the definition of organisational innovation as “the adoption of an idea or behaviour that is new to the organisation” (p.599).⁶ The OECD Manual clearly emphasise that carrying out organisational changes in reaction to a new managerial policy are innovations so long as they are the initial execution of new organisational technique in business practices, workplace organisation or external relations (OECD, 2005: 52)⁷. In other words, a

⁶ This claim was made by Hage (1999) in reference to the following publications: (Damanpour 1988, 1991, Daft & Becker 1978, Hage 1980, Hage & Aiken 1970, Zaltman, Duncan & Holbek 1973, Oerlemans et al 1998, Wood 1998, Zammato & O’Connor 1992)

⁷ The OECD (2005) offers examples of business practices as the initial execution of activities for codifying knowledge such as establishing database of best practices, lessons and other knowledge to enhance easy

strategy drawn to improve a firm's efficiency would not be an innovation except it is new to the firm and also being implemented for the first time (ibid.). The central focus of OECD (2005)'s definition on organisational innovation can therefore be identified as both internal and external constructs of firms designed mainly to serve the interest of a firm. This is in relation to the contextual explanations given to the main elements of the definition. However, there is a gap in serving less customer interest. The initial two elements of organisational innovation as discussed above gives much premium to the firm's development. It should be recognised that customers are very important to every industry's success and therefore it becomes a bit problematic when customer interest are not widely represented in a firm's organisational innovation.

From a perspective of industrial sociology, Armbruster, et al (2006) elaborates on the considerations of organisational innovation from two different contexts ("intra-organisational and inter-organisational"). Intra-organisational innovation is considered to transpire within a firm or organisation (p.30). This development could be linked with implementation of new organisational method in the firm's business practices, and workplace organisation aspects. This is similar to the OECD (2005)'s definition of organisational innovation discussed earlier, which is based on the internally bounded nature of activities within an organisation.

Inter-organisational innovation is also viewed as "new organisational structures or procedures with the organisation's environment" (ibid.). These could be seen as the firm's external relations with other firm and organisations as indicated in OECD, (2005). In specific terms, Armbruster, et al (2006) provides the following as examples of inter-organisational innovation: "joint ventures, R & D cooperation or supply chain management with other firms" (p.30).

The execution of organisational innovation is aimed at improving a firm's operations by decreasing administrative cost or transaction cost, improving workplace satisfaction, gaining access to non tradable assets or cost of suppliers (OECD: 51). Cost reduction in a firm's operation represents a vital element in organisational innovations. In between the lines, the context of this organisational innovation is seen as a firm's competitive advantage through cost reduction. Armbruster, et al (2006) points out that organisational innovation is only an intrinsic basis for competitive advantage but also permits and foster product and process innovations (p.30). This is because the success of new products or technologies will depend on whether the level of the organisational structures and processes match up with the implementation of these new technologies.

Radical and Incremental Innovations

So far, the discussions on types of innovation have covered different areas leaving a gap between other types of innovation which could be considered measurable. What are these other types of innovation? Radical and incremental innovations are among other types of innovation that has attracted several forms of literature discussions (for example, Ettlie et al. 1984; Damanpour & Aravind, 2006; Chandy & Tellis 1998; Nonaka and Peltokorpi, 2006; Leifer, R. et al. 2000). Radical and incremental innovations are distinguished by Dewar & Dutton (1986) as "clear departures from existing practices"; and "minor improvements in current technology" respectively (Damanpour & Aravind, 2006:54). What is of interest to this paper is how radical and incremental innovation manifest in the firms' activities. The manifestation of radical and

accessibility to others ; workplace organisation example is the initial execution of an organisational model of a firm that offers its employees greater autonomy in decision making and encourages them to contribute their ideas; external relations is also about executions of new approach to organisational relations with other firms or public institutions.

incremental innovation in a firm's operation may take different forms; but is useful to identify some of them. Understanding radical or incremental innovation is useful to identify whether the introduction of experience offerings as innovative strategy in the food sector could be identified as radical or incremental innovations?

The conception of "creative destruction" by Schumpeter (1942) emphasises that innovation wipes out the positions of firms dedicated to "old technology" on the market. This view has been identified to have resulted in the initial response to the influential impacts of radical innovation on the economy and the fate of individual firms (Chandy & Tellis, 1998:457). There is an indication from this claim that radical innovation is connected with creative destruction. This could be seen in terms of new technologies introduced by firms displacing old technologies on the market. In this regard, innovative companies with new outputs on the markets have the tendency of pushing out non-innovative firms. In theory, there is a great degree of substance in this notion, but to what extent can innovations be radically enough to displace old existing firms or output. Are all innovations acceptable on the market? Chandy & Tellis (1998) admits that not all innovations become radical product innovations, but radical product innovations do have the tendency to offset existing products (p.476).

Radical innovation is discussed in some literature in technological context. For instance is it considered as "fundamental changes that represent revolutionary change in technology" (Dewar & Dutton, 1986:1422). With reference to (Zaltman, Ehincan and Holbek, 1973), radical innovation is defined by Dewar & Dutton (1986) "as an idea, practice, or material artefact perceived to be new by the relevant unit of adoption" (p.1422). This definition is however subjected to criticism by Dewar & Dutton (1986) as lacking emphasis since innovations do differ in terms of newness to the adopting unit. In this sense the concept of radical is partially represented in this definition. Radical innovation is again defined by Chandy & Tellis (1998) as:

"the propensity of a firm to introduce new products that incorporate substantially different technology from existing products and can fulfil key customer need better than existing products" (p. 475).

This definition is influenced by the attempt to suggest a different explanation for radical innovation in the context of "organisational and attitudinal factors" that fosters product innovation. The size of firms is therefore considered as the major "organisational variable" that influences radical product innovation. The attitudinal factor is also considered as the degree to which a firm is ready to decrease the real or prospective "value of its investment" (ibid.). Even though this definition has been influenced by how organisational and attitudinal factors will promote product innovation, the contextual focus on product innovation is quite myopic. This is because it fails to consider other types of innovation such as process, marketing or administrative. It also fails to inform the extent to which an introduction of new products could be considered as radical on the market. Nevertheless, product innovation is equally important type of innovation in every firm and therefore discussions on the effects of a firm's radical product innovation is of significance. More so, the definition takes into consideration the adoption of new technology to satisfy the needs of consumers which is seen as useful for the understanding of the effects of radical innovation.

Leifer et al. (2000) offers quiet a broader definition of radical innovation as "a product, process, or service with either unprecedented performance features or familiar features that offer potential for significant improvements in performance or cost". (p.5). Emphasis attached to this definition is that radical innovation is viewed as resulting in striking changes that alters prevailing markets or industries, or establishment of new markets (ibid). The definition is also inspired by "new value added to the market place rather than by technical novelty or newness to the firm" (ibid).

p.6). This implies value added to the market is very vital to radical innovation. It also clarifies radical innovation as not being all about technical innovation as perceived by many. Despite the broad representation of this definition and its emphasis on added value to the market, it also fails to touch on the effects of radical innovations on the sizes of firms. That is the effects taking place on large or small firms as a result of adopting radical innovation. The impact of radical innovations on the size of firms remains controversial. Schumpeter (1934) asserted that small entrepreneurial firms are more inclined to be very innovative. However, there has been lack of agreement or consensus in later researches regarding the Schumpeterian claim (Leifer, 2000: 217). Schumpeter (1950) unleashes a contradiction to his earlier claim by stating that existing large firms with some level of “monopoly power” are the potential drivers of “technical progress” due to their greater opportunity to have “capital and skilled labour” (ibid.). In simple terms, small firms do not innovate very much as large firms (ibid.).

With regards to research on the impacts of radical innovation on the sizes of firms; Chandy & Tellis (1998)’s review⁸ shows there is insignificant development in understanding the real generators of radical product innovation. That is whether small or large firms are the generators of product innovations. They emphasise that there is lack of agreement among researchers on function of firm size. In this regard, “managerially useful generalisations are rare” (ibid). This statement in a way puts one in a fix on the issues of how innovations in rural food sector (small sizes) could establish a significant place on the market.

The consensus on whether large or small firms are the most creators of radical innovation may be bleak at this moment, but it is imperative to understand so far that radical innovation concerns itself with significant changes in a firm’s operations as a result of new introductions. However, it is important to find out how small firms in relation to rural food firms could be potentially capable of creating radical innovations through experience offerings. How can this be determined? An empirical study may be useful to determine whether the hypothesis of either large or small firms is the most potential creators of radical innovation.

How do we understand incremental innovation and its impact on a firm? Incremental innovation is referred to as:

“improvements in component performance that build upon the established technological concept; or refinements in system design that involve no significant changes in the technical relationships among components” (Meeus & Edquist, 2006: 26).

Fagerberg (2005) describes innovation as incremental when it is “continuous improvement” of products and methods of production (process) (p.7). These definitions help to know the boundaries of incremental innovations, but their emphasis is short of identifying the incremental effects of the non-technical aspects of innovations. The lack of focus on incremental innovation on other types of innovation such as marketing and organization, new sources of supply tend lessen the understanding of innovation in this regard. How can one read incremental innovation into other types of innovation when the focus is mostly on product and process innovation? However, there is general understanding of a clear distinction between incremental innovations, where the former is about improvement or continuous improvement. Radical and incremental are therefore types of innovation that can take place in most aspects of firms operations and also on the market.

⁸ Reviews on Acs and Audretsch 1991; Scherer 199; Galbraith 1952; Ali 1994; Mitchell and Singh 1993, Ettlie and Rubenstein 1987; Pavitt 199.

In general the entire section has provided useful insight on the types of innovation. It is there useful for one to reflect on these types of innovation for adoption into the production of experiences for customers and also to enhance a firm's competitiveness. Nevertheless, it is imperative to ascertain the sources of creating innovation.

4. Sources of innovation

It is usually easy to conclude that innovation is solely a construct of firms; but is this notion always true? Can innovative knowledge be also a construct of external actors? What constitute the sources of innovation?

According to Carneiro (2000) innovations offered on the market by a firm is a product of its knowledge workers' creativeness (p.95). This shows that the know-how embedded with workers of a company serves as source of innovation to a firm.

In Schumpeter's work: "The Theory of Economic Development" (1934), he contested that small firms working in vastly competitive industry are the main source of innovation. Thus, the key source of innovation is the "visionary entrepreneur". This claim is however myopic because he sees only the entrepreneur as source of innovation. In Schumpeter's other work: *Capitalism, Socialism and Democracy* (1942), he indicated that large firms working in vastly "oligopolistic industries" are the main source of innovation. The key source of innovation in this instance is "modern research and development (R&D) laboratories" (Keklik, 2003:1). The message carried across is simply that entrepreneurs (small firms) are no longer sources of innovation but rather "replaced" by research and development laboratories (ibid. p.9).

Schumpeter fails to realise that though R&D laboratories are capable of producing innovations, small industries could also access laboratories in which they can develop innovations. It would also not be realistic for all big firms to innovate through R&D laboratories. More so, not all innovations can be developed in the laboratory. This implies that the non-technical aspect of a firm's innovative capabilities is missing in Schumpeter's rationality. Marketing innovations of a firm for instance will not be carried out in a laboratory hence making this claim myopic. The idea of research and development as key source of innovation is also limited to endogenous approach since it is constructed within an organisation. Schumpeter's claim is rather practical in a technical innovative sense where firms may carry out process or product innovation.

von Hippel (1988) objects to the notion of firms as usually sources of product innovation due to variations in the sources of innovation (p.3). It is therefore inadequate to generalise producers/firms as sources of innovation. In substantiating this claim, von Hippel (1988) argues that users of innovations are the usual developers of many innovations, and suppliers are also usual sources of innovation. Users are considered as sources of "tacit and proprietary, codified knowledge" to firms which helps in formulating innovative answers to users' practical problems (Asheim & Gertler, 2005:293).

Other researchers have also identified innovation to go beyond the confines of firms. Grunert, et al. (1997) emphasise that the food industry brings in most of its very important "technological innovations" from outside the industry due to its less R&D strength (p.7). Diederer, et al. (2002)'s empirical study on innovative firms in agriculture also discovered that innovative ideas of farmers emerged from suppliers, the farmers (producers) and their colleagues⁹ (indicating

⁹ It was realized in this particular study that farmers were not bothered about their counterparts adopting their innovations. This development brought to light that sharing new technologies was of no significant

knowledge interchange between different actors) (p.77). Palmberg (2002) also considers suppliers of machinery and equipments to enhance innovation. However, he argues that supplier inputs as sources of innovation are insignificant. This is because the ability to incorporate, adjust and really operate the machinery and equipment applies to the user instead of the supplier (pp.25-26). However, Pavitt (1984) suggest that suppliers are sources of innovation in the supplier dominated industries in his seminal taxonomy. Palmberg therefore considers his view on suppliers as insignificant source of innovation in disagreement with Pavitt's argument (Palmberg, 2002: 26).

Ulijn & Brown (2004) also argues that sources of innovations are through "internal and external actors" (p.3). This resonate Drucker (2003)'s view that sources of innovation are "unexpected occurrences, incongruities, process needs, industry and market changes, demographic changes, changes in perception, and new knowledge". He describes the initial four sources as potential avenues within a firm, while the latter three sources are potential avenues external to a firm in its "social and intellectual environment" (p. 114). Hargadon (2003) also discusses innovations to emerge from accidents by emphasising that such processes are embedded in two main systems. These systems are "when people, ideas, and objects from different world come in contact". Secondly, "a mind prepared to exploit those moments". This assertion is made to substantiate his claim that innovations are actually created from exiting technologies (p.5).

Regulations and standards are also considered as another source of enhancing innovations (Palmberg, 2002: 26; Foster et al. 2006:122-124). Palmberg (2002) highlights that innovation and "capacity building" in relation to regulations and standards is a key attempt that necessitate strong relationship with "universities, and research organisations, engineering houses, customers and public procurers, as well as the regulators themselves" (p.26). This gives an impression that institutions mentioned above are key actors that produces knowledge for innovations. This also proves that knowledge produced for innovations is not always vested within a firm but also generated from external sources. This may imply that innovations emerge from networking agreements between different actors. In this regard, can networks of innovation be beneficial to rural food firms and to serve as leverage for rural development?

5. Networks of innovations

Drawing on the ideas of multiple literature sources, Powell & Grodal informs that the concept of innovators network have become familiar with many analysts over the past twenty years as an ordinary subject (Powell & Grodal, 2005:57). There are common exchanges of knowledge between different organisations, which is defined as "collaborative networks or inter-organisational networks"¹⁰. These networks are also defined as "collaborative innovation" (Owen, et al. 2008:39). The networks are considered as potential source of innovation since knowledge production is vital to foster competitiveness of firms on the market (ibid: 59). Significance of networking is learning from wide reserve of knowledge. Such importance is more beneficial to firms with wider networking capabilities (Powell & Grodal, 2005:59).

Recent theories of innovation emphasises that innovations basically rest on knowledge. In this regard knowledge is created, diffused and used in different processes and through diverse frameworks (Mohannak & Turpin, 2002: 14). According to Powell & Grodal (2005) different

threat as envisaged by many due to the trends of innovation becoming individual process as a result of competitions, see Diederer et al (2002:78)

¹⁰ These networks could involve external sources of R&D such as universities, consortia and government laboratories, and among local and foreign competitors, as well as customers in the development of new products and processes. See page Powell & Grodal, 2005:57

spheres of collaborations between organisations currently form key ingredients of business policy (p.57). Such collaborations between organisations are viewed in terms of formal and informal ¹¹ interrelations (Powell & Grodal, 2005:60; Graf, 2006:14; OECD, 2005:42). In reference to DeBresson and Amesse (2001), Holger Graf also identifies networks of innovation in diverse shapes such as:

“supplier-user networks, networks of pioneers and adopters, regional inter-industrial networks, international strategic technological alliances, and professional inter-organisational networks” (Graf, 2006:15).

These networks are indicative of heterogeneous interactions between firms and other external links in the creations of innovations. However, Graf (2006) argues that regardless of these organisational engagements, there is the occurrence of “physical interactions” between people. This implies “interpersonal networks” are viewed as critical to source of knowledge dissemination (p.15). Asheim & Gertler (2005) also views the exchange of information between users and producers as “social process of joint innovation and knowledge production” (p. 294). In my view, user-producer knowledge exchanges are untraded (at no cost to firms) form of network of innovation, which I consider as useful for a firm’s competitive position on the market.

Emphasises on Powell & Grodal (2005); and Graf (2006)’s discussions on networks of innovation have been based on high technology firms and technological exchanges. Other literature sources including Saxenian (1996); Storper (1995) also focuses their analysis on firm networks on high technology industries. This raises a question as to how such networks of innovation could be applicable in rural food firms. My concern is based on the notion that the food industry is usually viewed as “low-tech” since it has one of the least “R&D to sales ratios of any industry” (Grunert et al. 1997:1). One begins to wonder from this assertion; if there are possibilities for the food sector (rural food sector in particular) to improve its sales ratio through innovation networking to become competitive and to enhance rural development? However, there is a view that usual categorization of sectors as high or low-tech are becoming very less important for academic analysis because the technology, process and types of products usually associated with identifying sectors of all groupings have overtime become distorted. There are overlaps of knowledge used originally in particular sector being applied in others, while new knowledge becomes add-on to old knowledge rather than changing them (von Tunzelmann & Acha, 2005:408-409). This implies the categorisation of sectors as low or high- tech should/may not be an issue in relation to network innovation in the food sector.

As many innovations may be paramount in the food sector through technological exchanges, I wish to argue that networking should not be limited to this field as found in many literature sources. Non-technological activities such as marketing and services can also benefit from firm networking to enhance innovation. At least Michael Porter shows that in his value chain concept. The value chain concept will be discussed in later section.

Even though much importance has been attached to firm innovation networks; Fanfani (1995) draws on the inadequate attention given to the viability of networking in rural areas (Murdoch, 2000:413). Murdoch (2000) highlights on network innovation as a process to foster different approach to promote economic development, and also shows that networks come out of the agriculture sector in relation to divisions of labour between farm families (p.413). What are the

¹¹Formal contractual relations includes subcontracting relationships, strategic alliances or participation in the industry with research consortium, while the informal is based on common affiliation in professional trade association, or loose affiliation with a technical community. See Powell & Grodal, 2005:57

chances of food processing companies in this regard? Murdoch (2000) also affirms that networks is not the solution to rural development, instead it explains how new prospects could be fashioned out through reassessment of some conventional methods (p.417). Owen et al. (2008) argues that the success level of innovation networks is low. They claim about fifty percent of strategic associations do not succeed (p.39). There is also an issue of low interaction and less flow of knowledge in remote areas (Virkkala, 2007:513).

On a positive note, Virkkala, (2007) thinks the problem of lack of interaction in remote areas should not prevent innovations in small-medium-enterprise (p.514). This implies rural food firms which are usually small enterprise may stand the chance of benefiting from network innovations. Among Virkkala (2007)'s suggestions was firms to engage in "external networking". This sort of networking is defined by integrating into national sector or cluster based innovation system, built in the framework of national innovation system (ibid.). I consider this view useful, but it limits the networks to only national precincts. How do we go beyond that? I presume a broader scope of innovation system might be more useful to engage in wider networks. In this regard, can any ideas be drawn from the systems of innovation in the context of sectoral and regional innovation system in order to widen our scope of understanding? All the same, the discussion on networking provides insights and clues to analyse activities of actors to enhance innovation in the food sector.

6. Sectoral Systems of Innovation

Indeed, innovation can be characterised as processes involving networking and interactions between different actors within specific defined spaces, hence placing innovation as a system. To Malerba (2004), innovations are procedures involving "continues and systematic interactions among wide variety of actors" (p.1). According to Edquist (1997) the new way to learn about innovation in an economy is through "systems of innovations" (p.1). What do we learn from innovations of rural food sector through the systems of innovation? Edquist (1997); Malerba (2005) identify several discussions on the systems of innovation. Some have been drawn from different theoretical perspectives including "interactive learning theories and evolutionary theories" (Edquist, 1997:7). Others analyses have been on technological, national, sectoral and regional context (Malerba, 2005:386). This shows the complex and broad nature of systems of innovation. Considering the general dynamic processes taking place in the food sector, the sectoral system of innovation is being examined in this section to draw lessons from interactions within a sector, which influence innovations in a firm. Such lessons are expected to help develop ideas to address innovation issues in the rural food sector.

A sector is defined as "set of activities that are unified by some linked product groups for a given or emerging demand and which share some common knowledge". Thus firms within a sector have both common and diverse features (Malerba, 2005:385). In other words, they have certain things in common or operate jointly to achieve specific goals, but individually they do pursue different interest. Based on the above, I perceive firms in a sector as operating in a common arena or as complements and also compete at the same time. Malerba (2005) also asserts that boundaries of operation in sectoral innovation system could be broad, encompassing "local, national, and/ or global dimension" as opposed to a national system which is confined within a nation (p.386). This implies that interactions and activities in a sector could be seen from both narrow and broad perspectives.

Among literature on sectoral systems of innovation, Malerba (2005) offers a more comprehensive understanding of the concept. Therefore, his ideas will be the main feature for discussion in this section. His analyses on sectoral system is based on a three major framework (knowledge and technological domain; actors and networks, institutions). More so, he draws on evolutionary theory in his analysis of the sectoral systems of innovation.

The knowledge and technological framework of sectoral system is central to a definite “knowledge base, technologies and inputs” of a sector (ibid.). Hence, this raises an interest to find out the knowledge base, technologies and inputs when one deals with innovations of rural food firms. However, these factors are said to be periodically dynamic (ibid.). All the same it may be useful for one to identify the knowledge and technological scope of a sector for analytical purposes.

The actor and network framework highlights on composition of a sector as varied actors. These could be in the form of individuals, organisations (firms and non-firms), subunits of larger organisations and groups of organisations¹². These actors are distinguished by definite “learning processes, competencies, beliefs, objectives, or organisational structures, and behaviour”. Actors engage in networks of communication, trade, collaboration, “competition, and command”. This depicts sectoral system of innovation as organised networks of actors who develop and exchange technologies pertinent to innovation and its introduction on the market (ibid.).

Institutions within the framework of sectoral innovations system tend to guide the “cognition, interactions and actions” of actors in a sector. Such institutions include “norms, routines, common habits, established practices, rules, laws, standards”, etc. (ibid.). This implies actors within a sector are constrained or regulated mainly by these institutions and therefore determine the extent to which firms could engage in some innovative activities. Institutions are said to possibly encompass those that “bind” actors to others. This is developed through relations between actors (e.g. contracts). They could also be “formal and informal; and also more binding to less binding” (ibid.).

The above framework offers lessons on the boundaries in which sectors operate. Therefore it helps to identify the various systematic interactive processes through which innovations could be developed. Nevertheless, the sectoral system is viewed as dynamic and transform through co-evolution of its elements (ibid.). Generally, the framework is useful to understand the strengths, competences and factors that regulate the operations of a sector. It also depicts the social process of innovation. Having said that, how do we look at innovations in a more specific spatial/geographical context and how actors operate?

7. Regional innovation system

In recent times there is growing attention to innovation systems at the regional level (Mohannak & Turpin, 2002: 22). In order to understand innovation as a function of regional economic development, it is imperative to know what constitutes a region. According to Equist (1997) innovation system could be “regional” within a nation (p.13). This implies a region may not represent only global, continental or urban but could be rural. Cooke (2003) highlights on the lack of conventional acceptance of the definition of region; and argues that region is an “intellectual concept”, which remains solely in relation to standards through which it is defined (p.3). He adds that the confines of regions are not rigid but dynamic. Regions could spring up and die out; hence in analysing a region, there should be established standards which classify an operational element within a particular period. In this sense, the concept of industry cluster is occasionally applied to define a region in economic context (ibid.).

The concept of industry cluster comes into the picture of regional innovation system probably by virtue of it being regarded as space of collaboration and interchange of know-how (Virkkala,

¹² See Malerba 2005:385 for more details of actors.

2006:515). Therefore Steiner & Hartmann (2006) views clusters to operate as an establishment for knowledge acquisition, and organisation of knowledge making, in the allocation of innovation process (ibid.).

Taking these views into consideration; can one conclude that the competitiveness of rural food firms through regional innovation system could be achieved through cluster formation? Virkkala (2006) argues that “geographical proximity” serves as merits to utilise local based knowledge within a cluster (p.516). The interesting issue is whether knowledge obtained from clusters could be the best source of innovativeness for firms? Bell & Pavitt (1993) sees the most essential build up of knowledge as localised in firms, as they are linked with learning from particular observations in creating and functioning of production arrangements (P.167). This indicates that innovative knowledge could not be sourced from only cluster networking but also through in-house knowledge build up. However, this leaves a puzzle as to which approach would be effective for a firm. That is whether cluster networking or in-house knowledge building. In my estimation both sources could be useful but it may depend on effective development of knowledge and how they are managed by the firm. More, so in order for firms to increase their value it may be necessary to assess the best source for consideration, since both could have their competences and weaknesses.

According to Mohannak & Turpin (2002), advocates of regional innovation system perceive a region as highly significant instrument within the system of innovations concept (p.22). This view is embedded with several assumptions including the interactions between innovative firms and numerous complimentary entities. Based on this assumption, innovation is considered as a “learning process” that is merited from the propinquity of institutions that can inspire such practices (ibid. p.22-23). One of the reasons behind the regional innovation system is a platform to exploit the products of knowledge producing institutions for productive economic utilisation to help current up-and-coming economic venture (Asheim & Gertler, 2005:299). This implies that firms’ innovativeness is localised within a region through collective and mutual networking. Does it mean that rural food firm can establish their competitiveness and enhance rural development from regional innovative system approach? What are the necessary resources available in rural areas for food firms to utilise the importance of regional innovative system? What factors threaten rural firms as they tend to compete with other regions such as urban areas?

According to Asheim & Gertler (2005) regional system of innovation concept is inspired by the national system of innovation concept. The foundations of these two concepts are related because they are central to territorial oriented innovation system (p.299). There are variations of this regional innovations system concept in terms of definitions and types (Asheim & Gertler 2005: 300; Doloreux 2004:483)¹³. The most acceptable definition of regional innovation “consist of interacting knowledge generation and exploitation sub-systems linked to global, national and other regional systems for commercialising new knowledge” (Cooke, 2004: 3).

The concept of innovation in regional context is therefore an interface of multiple interactions between different entities at a given place. This tends to make location critical for innovation systems. Innovations have turn out to be idiosyncratically regional; converging at areas where “entrepreneurship, investments, science and technology” meets (Bracyzk, et al. 2004: 2). The interactions and knowledge diffusion between economic bodies, research organisations and public agencies (Asheim & Gertler, 2005:293; Doloreux, 2004:482) is therefore crucial for rural

¹³ See above references for detailed definitions and emphasis on the variations of regional innovation system

food firms to explore to foster competitiveness. The question is how do they do that? Do rural areas have enough of these actors above to support their competitiveness process?

There is a notion that innovation is reciprocally active and “territorially-embedded process” which is inspired and induced by several players and communicating bodies situated within and beyond a firm (Asheim and Cooke, 1999; cf. Doloreux, 2004:482). This notion has inspired the likes of (Braczyk et al., 1998; De La Mothe and Paquet, 1998; Acs, 2000; Cooke et al., 2000; Asheim et al., 2003). They highlight on the regional innovation system as becoming a foremost mechanism used to demonstrate innovation developments and models pooled together by companies and industries at the regional level since the 1990s (Doloreux, 2004:482). These processes of innovation development are also interpreted by (Doloreux, 2004) as “socially” related due to the interactions between firms and other external bodies (p.483). It would be interesting to know how efficient such interactions are carried to enhance the progress of firms.

Doloreux (2004) emphasises on Asheim (2002)’s view to inform us that the social nature of innovations and learning has been argued to be efficient when involving neighbouring actors to enhance regular communication (p. 483). Explanations to the usefulness of proximity is also identified in Doloreux (2004) based on Gertler et al., (2000) are as such: proximity enhances regular close and personal communication which is ideal for learning; usual sharing of common regional culture by firms in close proximity; regional culture and the communication led common language are enhanced largely by the establishment of regional institution (p.483). These reasons indicate the potency and the case for interpersonal interactions to foster innovations embedded in regions.

However, in the advent of increasing information technology and knowledge diffusion; is regional or geographical proximity an absolute advantage for firm networking? I perceive culture as socially constructed, and therefore firms from different regions could create their own business culture and engage in interactive networking that would promote innovations and competitiveness. Perhaps the obstacle to such networking may be lack of preparedness of firms in different regions to collaborate, funds and other logistical problems. However, intra-firm collaboration is not far from reality in non-geographical proximity. In this regard, rural areas could define a regional innovation system based on establishing networks with other rural areas in both national and global context to compete. Digressing into a pragmatic situation, Eraydin (2005) reiterates on the business community’s view on national and offshore relations as more imperative in establishing thriving “supply chains and market” (p.68). In this sense, the focus of the business community was outside the precincts of their regions to source appropriate business actors. This rationality tends to weaken the focus of regional innovation within geographical proximity.

Despite the significance of regional innovation system, it has been noticed to work differently in regions such as metropolitan, periphery and rural regions. It is seen to function much better in big cities due to occurrence of high levels of technological change and innovation, and the existence of “agglomeration forces such as infrastructures, supplies, universities, etc” (Doloreux, 2004:484). Remote regions are seen to have less possibility to be innovative due to the “lack of capital and physical infrastructure, and low levels of education” (ibid.). This assertion is however debateable since remote regions differ among nations. For instance remote regions in an advance country like Denmark may have the needed capital and infrastructure to engage in innovation led development. It is therefore a bit narrow to generalise remote regions as incapable to innovate.

In retrospect, the concept of innovations has been digested in terms of definitions, types of innovations, networks, sectoral and regional systems of innovation. It illustrates innovations as a

mosaic or multiple ‘colours’ of systematic processes and interactions. The following diagram illustrates the concept of innovation as discussed so far this paper. It helps to visualise the innovations concept, and also serve as means to reflect on how innovations could be rationalised into experience economy in the rural food sector.

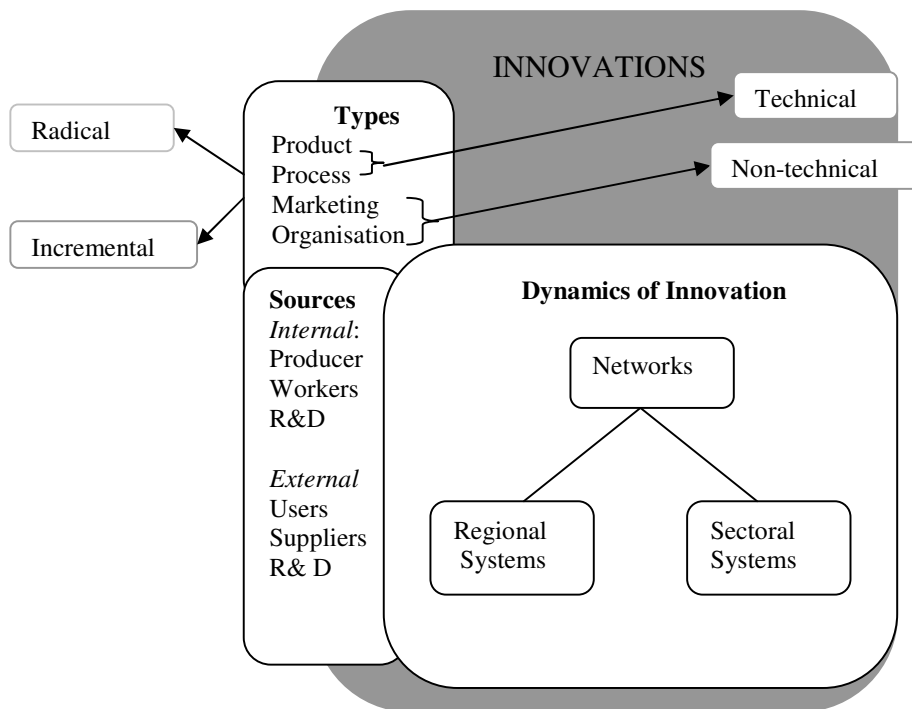


Figure 1 Colours of innovation

The understanding of innovations so far answers the first part of the fundamental question of this paper. In other words, the above diagram tells us “what is innovation”. However, some limitations are identified with rural locations in general, and small firms which is a characteristic of rural food firms. These limitations may threaten the possible innovativeness of rural food firms. Notwithstanding this fact, it is imperative to access how innovations could work in a firm to promote competitive advantage.

8. Innovations as source of competitive advantage

In this section, the attempt is to look at innovation in a firm’s environment. That is to understand activities of a firm through which competitive advantage could be achieved by realising newly improved approach to compete on the market. The firm’s achievement of competitive advantage as opposed to its rivals is manifested when it operates at “low cost” or through “differentiation” (Porter, 1990:40). The later is concerned with exceptionally creative activities of a firm which results in higher consumer value or attracts high prices (ibid.). The attempt to discover how innovations could work in the rural food firms to achieve competitive advantage is inspired by Michael Porter’s value chain concept. The value chain is therefore a hypothesis to identify innovations in the rural food firms’ operations.

Value chain can be characterised as one of the useful and comprehensive models to analyse the various internal and external processes of activities which enhances a firm’s competitive strength on the market. Literature sources such as Rugman & Collinson (2006); Bruhn & Georgi (2006) have applied the value chain concept to analyse the activities of firms to compete; hence

indication its usefulness. What is the value chain and how can it enhance innovation in firms? What are the boundaries in which the value chain may become useful for rural food firms?

According to Porter (1985) the value chain is fundamentally a means to analyse the “sources of competitive advantage”. It is a logical means to assess “all the activities” a firm engages in, and the ways these activities interrelate (p.33). This implies that activities within a firm’s value chain engage in interactive processes to enhance competitive advantage. This is considered useful to reflect on how rural food firms could innovate through these processes to become competitive. Porter, (1990) argues that “careful management linkages can be a decisive source of competitive advantage” (p.42). This implies that interactive processes within rural food firms should be conducted tactfully in order to produce at a lower cost or differentiated output.

For a firm to achieve competitive advantage there is a need for its value chain to be organised as a structure and not as disconnected fragments. This calls for the firm to reconfigure its value chain, via “relocating, reordering, and regrouping” to advance its competitive place on the market (ibid.). In this regard, will the transformation of activities in the rural food sector towards experience creations be a source of competitive advantage? What sort of innovations could be identified in the transformation process to enhance the firm’s competitiveness?

Rugman & Collinson (2006) simplifies the meaning of value chain as “the way in which primary and support activities are combined to provide goods and services and increased profit margin” (p.235). In other words both the primary and support activities tend to support each other in a firm’s operations. Hence, they are largely complements of each other. The primary activities consist of developed material output, trading and delivery to the consumer and also post-trading services (Porter, 1985:38). The primary activities are separated in “five generic categories” (ibid.). They are as follows:

“(1) inbound logistics, such as receiving, storing, materials handling, and warehouse activities; (2) operations, in which inputs are put into final product form by performing activities such as machining, assembling, testing, and packaging; (3) outbound logistics, which involve distributing the finished product to the customer; (4) Marketing and sales, which are used to encourage buyers to purchase the product; and (5) service for maintaining and enhancing the value of a product after the sale through activities such as repair, product adjustment, training, and part supply” (Rugman & Collinson, 2006: 235-236; Porter, 1985: 39-40) .

Porter (1985) establishes that the support activities are also separated in “four generic categories” of which every group is separated into several different “value activities” which, are definite to a specific industry. He offers an example that in technological development, distinct activities may encompass “component design, feature design, field testing, process engineering, and technological selection” (p.40). The support activities involve the following:

“(1) the firm’s infrastructure, which is made up of the company’s general management areas; (2) human resource management, which is made up of selection, placement, appraisal, promotion, training, and development of a firm’s personnel; (3) technology in the form of knowledge, research and development, and procedures that can result in improved good and services; and (4) procurement, which involves the purchasing of raw materials, suppliers, and similar goods” (Rugman & Collinson, 2006: 236; Porter, 1985:40-43) .

The following diagram shows the value chain activities of a firm.

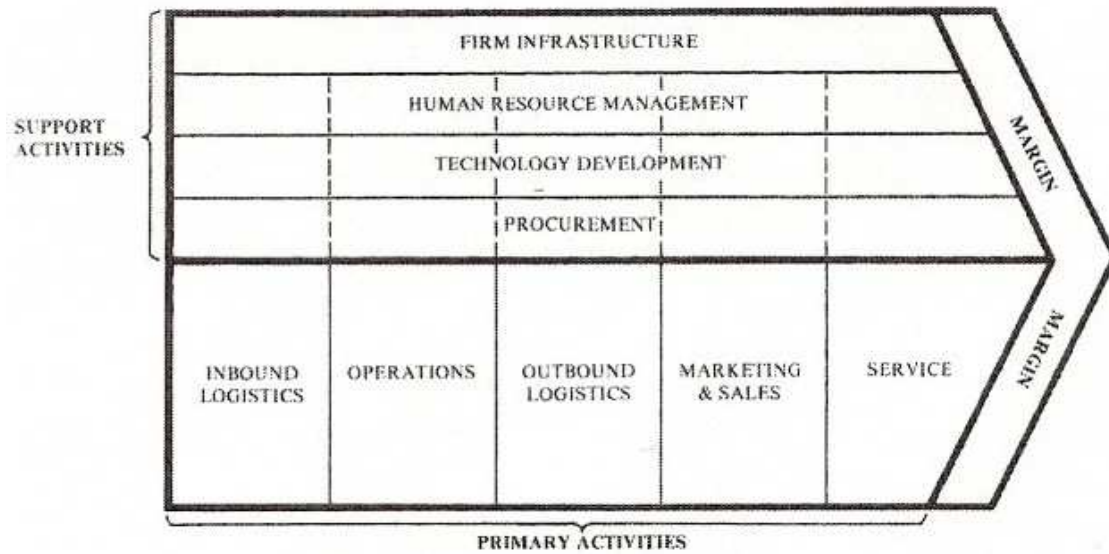


Figure 2 The Generic Value Chain (Porter, 1985:37)

According to Michael Porter, all support activities within the dotted lines on the value chain specify their possible linkage with particular primary activities and also “support the entire chain”. However, a firm’s infrastructure is solely linked with supporting the entire value chain (Porter, 1985:38). Porter (1990) argues the significance of activities differs in relation to competitive advantage in various businesses (*ibid.*). This is understood from a perspective that although all activities on the value chain are important, specific activities are considered more important in some firms than others in their operations. Taking the diversity of firms’ activities to achieve competitive advantage into consideration; one may assume that firms are complex entities whose activities are not on fixed, but rather adopt different strategic variables to compete. This could be inferred from the notion that firms achieve competitive advantage through innovation. That is by developing “new ways to conduct activities, employing new procedures, new technologies or different inputs” (*ibid.*). Porter (1985) also asserts that in order to identify competitive advantage, it is important to mark out “a firm’s value chain for competing in a particular industry” (p.45). In this sense, “each generic category can be divided into discrete activities” (*ibid.*).

On the basis of the above notions, my conceptual analysis of the food sector’s value chain is focused on marketing and sales. However, this does not alienate other activities on the value chain. They co-exist or compliment in one way or the other since they play significant roles towards a firms’ innovativeness and competitive advantage. In this sense, food firms may draw heavily on marketing activities to realise their competitive advantage, but do not neglect the roles of other primary activities on the value chain. This is because marketing activities could be developed around other activities on the value chain. Nevertheless, the importance attached to marketing and sales in the rural food sector’s value chain is a hypothesis, which is being conceptualised for a couple of reasons.

The changing nature of society’s demand for experience products explain why marketing and sales has becomes a focus of analyses in the food sector value chain. Experience economy¹⁴ has

¹⁴ See Pine & Gilmore (1998, 1999) for more understanding of the experience economy concept.

been identified as a new ideological era in economic development inspired by “people’s search for identity and involvement in an increasingly rich society” (Lorentzen, et al. 2007: 2). Such identity search is evident by people’s demand and consumption of experience products. The experience economy indicates consumers’ incontestable yearning for experiences, which is reciprocated by firms through the designs and publicizing of experiences (Pine & Gilmore 1998:98; Hayes & MacLeod, 2006:45). Even though consumers demand experience products, Pine & Gilmore (1999) argues it is also an intentional constructs of firms. That is through the utilisation of “services as the stage and goods as prop” to occupy individual consumers (p.11). In other words, firms create memorable experiences around products to boost higher economic value which may become the firm’s differentiated¹⁵ product. In regards to the above, I perceive marketing and sales as possible “appropriate category” (Porter 1985:45) on the value chain to increase a firm’s value through the attachment of experiences to products. As experience consumption becomes the hallmark of consumers; there is possibility for firms to intensify marketing and sales for consumers to be aware of their offerings. The various interactions of marketing and sales on the value chain therefore become imperative to assess a firm’s possible innovativeness and subsequent achievement of competitive advantage.

Secondly, today’s changing consumers demand for experience products provoke the need for customer-producer inter-linkages. Porter (1985) emphasises that if firms will engage in interactions with consumers, the appropriate category should be marketing (p.45). Emphasis on marketing becomes important in the value chain due to the expected interrelationships between firms and customer. Presumably, the direct contacts between these two actors may manifest as source of innovation for the firm and subsequent achievement of competitive advantage. Such interactions may also enhance trust, security and higher consumer demands for products. Ravald & Grönroos (1996) also argues that any firm’s attempt to offer competitive value to customers must have detailed idea of the customer’s needs and the activities which constitute the customers value chain (p.23). Marketing activities through producer-consumer interactions therefore becomes leverage for firms to have detailed knowledge of consumer needs. This may help in developing new ideas for production. The value chain is viewed as a “system of interdependent activities” (Porter, 1985:48). Thus various activities on the value chain do interact in the firm’s operations. For instance interactions will take place between the support activities and marketing and sales activities in the cause of the rural firms operations. The same applies to other primary activities though.

The following sets of diagrams depict a hypothetical value chain of a rural food firm. Figure 3, illustrates marketing and sales as the rural food sector’s generic category of its value chain. It shows the discrete activities within marketing and sales, which interacts with the support activities on the value chain. As firms are capable of developing innovations internally, innovations could therefore emerge through discrete activities in the marketing and sales section and also through its interactions with other sections of the support activities.

More so, some actors on the value chain may be outside the firm, yet the interactions between a specific firm and its complementary firm could also spark off some innovative ideas. That is, since innovations could be developed from networks; there is a possible collaboration between different actors to engage in joint marketing and sale activities on the value chain, which could lead to the discovery and implementation of new ideas for rural food firms.

¹⁵ See Pine & Gilmore (1999:98)’s diagram: “The Progression of Economic Value”

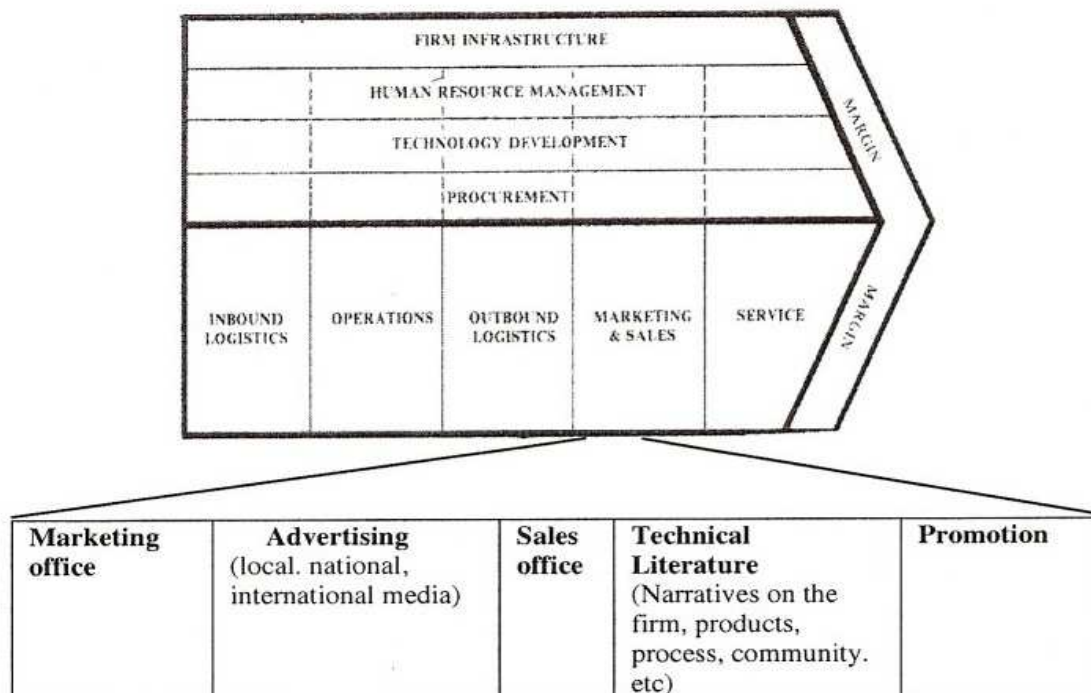


Figure 3 Subdividing generic value chain for rural food firms (Adopted from Porter 1985:46)

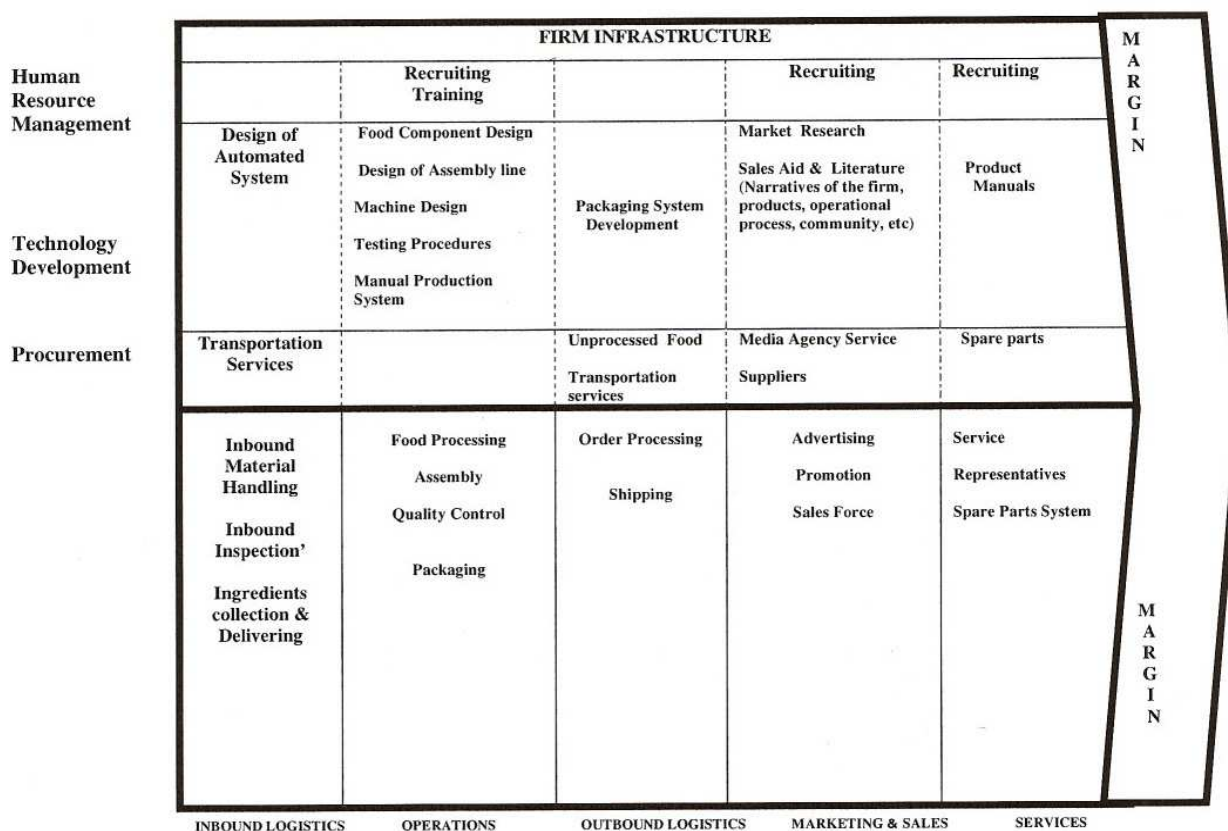


Figure 4 The value chain of a rural food firm (Adopted from Porter 1985:47)

Such collaborations could take place between cluster of food firms¹⁶, local government authorities, local business councils, and other complimentary businesses of the food sector. Such possibilities could be in opening of joint marketing offices, advertising, sales offices, and promotion activities to market rural food products and rural areas in general. It could also be in the form of developing common technical literature, which spells out narratives of the firm, the products, process of production and the place of production to customers. In other words, these networks may not help only to improve individual food firms in the area but will have latent function or a multiplier effect on place development. This is because firms may expand as they become successful, and that will require more labour or attract new skills, new investments, new or improved infrastructure among others. Such collaborative networks may therefore become useful for rural development.

Figure 4; illustrate the entire value of the food sector. It shows the various variables of the primary and support activities on the value which interacts with each other to enhance firm competitiveness. Basically, the inputs on the value chain sets up a framework or opens a black box for one to identify issues to address empirically. In all, the value chain depicts the various activities of a firm in which innovations could be developed. That is through the systematic and interactive processes involving the different activities and actors. It is therefore a means through which a firm's competitiveness could be achieved. Generally, the value chain concept helps one to understand the processes through which innovations may be developed and utilised in a firm. It helps to identify the internal and external sources in which innovations could be developed in a firm to achieve competitive advantage. This shows that innovation could be a source of competitive advantage in the rural food sector.

9. Conclusion

In this paper, the concept of innovations has been discussed at length. Various conceptual representations on what constitutes innovations, actors involved, how these actors interact and the arenas in which they interact to produce innovations have been laid bare. These representations are evident in the meanings of innovation as well as the discussions on the types of innovation, sources of innovation, network of innovations, sectoral, and regional systems of innovations. These ideas have been reflected into the firm environment through analyses of the value chain concept.

Generally, innovation is associated with the introduction of new activities on the market. It manifest through a systematic and interactive processes between different shades of actors and activities. It has also been identified as a means through which firms could achieve competitive advantage. Lessons drawn in this paper is a food for one's thought. That is a guide to reflect on its inputs to ascertain whether the introduction of experience economy in the food sector could be an innovative strategy to enhance competitiveness. One may be convinced theoretically that experience economy may be an innovative strategy for rural food firms, but how do we measure these notions pragmatically. What are the capabilities and strengths of the rural sector to serve as leverage for innovations? This calls for an empirical analysis to qualify the theoretical understanding obtained. In this regard, this paper is expected to serve as conceptual framework for empirical analysis into the case of Thisted, a rural region located in the north western Denmark. This study is being conducted in the Department of Development and Planning, Aalborg University, Denmark.

¹⁶ The cluster could be at the sectoral or regional level.

References

1. Armbruster, H. et al. (2006) "*Patterns of organisational change in European industry (PORCH) ways to strengthen the empirical basis of research and policy*". Karlsruhe: Fraunhofer ISI, 2006, 66 S. (Report).
2. Asheim, B. T., & Gertler, M.S. (2005) "*The geography of innovation: regional innovation system*", In Fagerberg et al (Eds.) (2005) *The Oxford handbook of innovation*. Oxford: Oxford University press.
3. Baker, D. (2004) "*Identifying firms that win and lose from Danish food industry policy*". Fødevareøkonomisk Institut. Working paper, Number 09.
4. Baker, D. et al. (2007) "*Survey of Danish food industry firms' views on policies that impact the food industry*". Fødevareøkonomisk Institut. Working paper, Number 11
5. Bell, M. & Pavitt, K. (1993) "Technological accumulation and industrial growth: contrasts between developed and developing countries". *Industrial and Corporate Change*, Vol. 2, No. 2, pp.185-203.
6. Braczyk, H. et al (2004) (Eds.) "*Regional Systems of Innovation: the role of governance in globalised world*" (2nd edition). London: Routledge Publications.
7. Bruhn, M. & Georgi, D (2006) "*Service marketing: managing the service value chain*". London: Prentice Hall, Pearson Publication.
8. Carneiro, A. (2000) "How does knowledge management influence innovation and competitiveness?" *MCB University Press Journal of Knowledge Management*. Vol. 4, No. 2, pp. 87-98.
9. Carù, A. & Cova, B., (2003) "Revisiting consumption experience: a more humble but complete view of the concept". *Marketing Theory Articles*, Vol.3, No.2, pp.267-286
10. Chandy, R. K & Tellis, G. J. (1998) "Organizing for radical product innovation: the overlooked role of willingness to cannibalize" *Journal of Marketing Research*, Vol. 35, No. 4, pp. 474-487.
11. Chen, Y. (2006) "Marketing innovation" *Journal of Economics & Management Strategy*, Vol. 15, No. 1, pp. 101-123
12. Cooke, P. (2003) "*Strategies for regional innovation systems: learning transfer and applications*". Vienna: United Nations Industrial Development Organisation.
13. Cooke, P. (2004) "*Introduction: Regional Innovation System-An Evolutionary Approach*", In Braczyk, H. et al (2004) (eds.), *Regional systems of Innovation: the role of governance in globalised world*. (2nd edition). London: Routledge Publications.
14. Damanpour, F. et al. (1989) "The Relationship between types of innovation and organizational performance" *Journal of Management Studies* Vol. 26, No.6, pp. 587-601
15. Damanpour, F. & Aravind, D. (2006) "*Product and process innovations: A review of organizational and environmental determinants*". In Hage, J. & Meeus, M. (Eds.), *Innovation, Science, and Institutional Change*. New York; Oxford University Press.
16. Darroch, J. & McNaughton, R. (2002) "*Examining the link between knowledge management practices and types of innovation*". *Journal of Intellectual Capital*, MCB UP limited, Vol. 3, No. 3, pp. 210-222
17. Dewar, R. D. & Dutton, J. E. (1986) "The adoption of radical and incremental innovations: an empirical analysis", *Management Science*, Vol. 32, No. 11, pp. 1422-1433.
18. Drucker, P. (1998) "The discipline of innovation" *Harvard Business Review*. pp.149-157.
19. Drucker, P. (2003) "The discipline of innovation", In *Harvard Business Review on The Innovative Enterprise*. Boston: Harvard Business School Press.
20. Diederer, P. et al. (2002) "Innovation and farm performance: the case of Dutch agriculture", in Kleinknecht, A. & Mohnen, P. (Eds.) (2002) *Innovation and farm performance*. New York: Palgrave Publications.

21. Edquist, C. (1997) "Systems of innovation approaches- their emergence and characteristics", in Edquist, C. & McKelvey, M. (Eds.) (2000) *System of Innovation: Growth, Competitiveness and Employment*. Vol. 1. Cheltenham: Edward Elgar Publishing.
22. Essletzbichler, J & Winther, L. (1999) "Regional technological change and path-dependency in the Danish food processing industry". *Geografiska Annaler* 81 A: 179-196.
23. Ettlie, J. E. *et al.* (1984) "Organizational strategy and structural differences for radical versus incremental innovation," *Management Science*, Vol. 30, No. 6, pp. 682-695.
24. Eraydin, A. (2005) "Global networks as open gates for regional innovation systems" in Alvstam, C.G. & Schamp, E.W. (Eds) (2005) *Linking industries across the world*, Burlington: Ashgate Publication.
25. Fagerberg, J. (2005) "*Innovation: a guide to the literature*", in Fagerberg, J. *et al.* (Eds.) (2005) *The Oxford handbook of Innovation*, Oxford, Oxford university Press.
26. Fiore, A. M. *et al.* (2007) "Experience economy: adding value to small rural businesses" *Journal of Extension*, Vol. 45, No. 2, Article number 21AW4. pp.1-13. Also available at: <http://www.joe.org/joe/2007april/iw4.shtml> (Accessed on 24.03.2008)
27. Gentile, C. *et al.*, (2007) "How to sustain the customer experience: an overview of experience components that co-create value with the customer", *European Management Journal*. Vol. 25, No.5, pp. 395-410
28. Gjerding, A. G. & Rasmussen, J. G. (2007) "*Organisational innovation and how it challenges management theory*". MEADOW, WP2, Working paper, Aalborg University. Available at: http://vbn.aau.dk/fbspretrieve/12716320/Organisational_level_-_WP_2_-_ANG.pdf (Accessed on 30.03.2008)
29. Graf, H. (2006) "Networks in the innovation process: local and regional interactions". Cheltenham: Edward Elgar Publication.
30. Grunert, K.G. *et al.* (1997) "A framework for analysing innovation in the food sector" in Traill, B. & Grunert, K.G. (Eds.) (1997) *Product and process innovation in the food sector*. London, Chapman & Hall Publication.
31. Hargadon, A. (2003) "How breakthroughs happen: the surprising truths about how companies innovate". A summary of the original text. *Audio-Tech Business Book Summaries 12-14*, Vol. 12, No.7.
32. Hage, J. T. (1999) "Organizational innovation and organizational change". *Annual Review of Sociology*, Vol. 25. pp.597-622
33. Hayes, D. & MacLeod, N. (2007) "Packaging places: designing heritage trails using and experience economy perspective to maximise visitor engagement" *Journal of Vocation Marketing*, Vol. 13, No.1, pp. 45-58.
34. Howell, J. (2005) "Manufacturing experience: urban development, sport and recreation" *International Journal of Sports management and Marketing*, Vol. 1, Nos. ½, pp.56-68
35. Hine, D & Carson, D. (2007) (eds.) "Innovative Methodologies in Enterprise Research". Cheltenham: Edward Elgar Publication.
36. Jensen, M, *et al.* (2007) "Forms of knowledge and modes of innovation". *Research Policy*. Vol. 36, No.5, pp. 680-693
37. Keklik, M. 2003. "*Schumpeter, innovation and growth: long-cycle dynamics in the post-WWII American manufacturing industries*. Burlington: Ashgate Publications.
38. Lash, S. (2006) "Experience". *Theory, Culture & Society*. Vol. 23. Nos. 2-3, pp.335-341.
39. Leifer, R. *et al.* 2000. "Radical innovation: how mature companies can outsmart upstarts". Boston: Harvard University Press.

40. Malerba, F. (2005) "Sectoral systems: how and why innovations differ across sectors" in Fagerberg, J. et al. (Eds.) (2005) *The Oxford handbook of Innovation*. Oxford: Oxford University Press.
41. Martin, L. (2000) "The changing structure of the agri-food sector and opportunities for economics and management" *Canadian Journal for Agricultural Economics*. Vol. 48. pp. 363-373
42. Lorentzen, A. et al. (2007) "Small cities in the experience economy: an evolutionary approach. A paper presented at the International Conference (Regional Studies Association): Regions in Focus Conference. 2nd -5th April 2007. University of Lisbon, Portugal.
43. Meeus, M.T.H. & Edquist, C. (2006), "Introduction" in Hage, J. & Meeus, M. (Eds.) (2006) *Innovation, Science and Institutional change*. New York: Oxford University Press.
44. Metcalfe, J. S. (2005) "System Failure and the case for innovation policy", in Llerena, P & Matt, M. (Eds.) (2005) *Innovation Policy in Knowledge Based Economy: Theory and Practice*. Berlin: Springer-Verlag.
45. Metcalfe, J.S (2006) "Innovations, competition, and enterprise: foundations for Economic Evolution in Learning Economics" in Hage, J. & Meeus, M. (Eds.) (2006) *Innovation, Science and Institutional change*. New York: Oxford University Press.
46. Mohannak & Turpin, (2002) "Contemporary perspectives and debates" in Turpin, T et al. (Eds.) (2002) *Innovation, Technology Policy and Regional Development: evidence from China and Australia*. Cheltenham: Edward Elgar publication.
47. Murdoch, J. (2000), "Networks – a new paradigm of rural development". *Journal of Rural Studies*, Vol.16, No.4. pp. 407 – 420.
48. Nielsen, T. (2004) "Understanding the experience industry: A Swedish Perspective on Creativity". Stockholm: QNB Analys & Kommunikation AB.
49. Nonaka, I. & Peltokorpi, V. (2006) "Knowledge-based view of radical innovation: Toyota Prius case". In Hage, J. & Meeus, M. (Eds.) (2006) *Innovation, science and institutional change*. Oxford, New York, Oxford University press.
50. Nordic Innovation Centre (2005) "Innovation system and the periphery" Summary Report. Nordic Innovation Centre.
51. Olsson, B. (2007) "A classic updated: a review essay", *International Journal of Education & the Arts*, Vol. 8, Review 1, pp.1-11
52. Organisation for Economic Co-operation and Development (OECD) (2005). "Oslo Manual: Guidelines for Collecting and Interpreting Innovation Data". 3rd Edition. A joint publication of OECD and the Statistical Office of the European communities (EUROSTAT).
53. Owen, L. et al. (2008) "Collaborative innovation through the extended enterprise". Emerald publications, Vol. 36, No 1, pp.39-45
54. Palmberg, C. (2002) "The many faces of absorptive capability in low-tech industries: the case of glue-lam timber and foodstuffs". Paper to be presented at the DRUID Summer Conference on "Industrial Dynamics of the New and Old Economy - who is embracing whom?" Copenhagen/Elsinore 6-8 June 2002.
55. Pianta, M. (2005) "Innovation and employment" in Fagerberg, J. et al. (Eds.) (2005) *The Oxford handbook of innovation*. New York: Oxford University Press.
56. Pine II, B. J. & Gilmore, J.H. (1998) "Welcome to the experience economy" *Harvard Business Review*, pp. 97-105.
57. Pine II, B. J. & Gilmore, J.H. (1999) "The experience economy: work is theatre and every business a stage". Boston: Harvard Business School Press.
58. Porter, M. (1985) "The competitive advantage: creating and sustaining superior performance". London: MacMillan Publication.

59. Porter, M. (1990) "*The competitive advantage of nations: with A New Introduction by the Author*". London: MacMillan Publication.
60. Powell, W. W. & Grodal, S. (2005) "*Networks of Innovators*". In Fagerberg *et al.* (Eds.) (2005) *The Oxford handbook of innovation*. New York: Oxford University Press.
61. Raval, A. & Grönroos, C. (1996) "The value concept and relationship marketing", *European Journal of Marketing*, Vol. 30, No. 2.
62. Regmi, A. (Ed.) (2001) "*Changing Structure of Global Food Consumption and Trade*". Market and Trade Economics Division, Economic Research Services, United States Department of Agriculture, Agriculture and Trade Report. WRS-01-1.
63. Rugman, A. M. & Collinson, S. (2006) "*International Business*" (4th edition). Essex: Prentice Hall, Pearson Publication.
64. Saxenian, A. (1996) "Inside-Out: regional networks and industrial adaptations in Silicon Valley and Route 128", *A Journal of Policy Development and Research*, Vol.2, No.2, pp.41-60
65. Simmie J. (2006) "*Do clusters or innovation systems drive competitiveness?*" in Asheim B, *et al.* (Eds) (2006) *Clusters and Regional Development: Critical reflections and explorations*. London: Routledge Publication.
66. Storper, M. (1995), "The resurgence of regional economies, ten years later: the region as a nexus of untraded interdependencies", *European Urban and Regional Studies*, Vol.2. No.2, pp. 191-221.
67. Sundbo, J. (2003) "*Innovation and strategic reflexivity: an evolutionary approach applied in services*" in Shavinina, L. V. (Ed.) (2003) *The handbook on innovation*. Oxford: Pergamon Publication.
68. Toumi, I. (2006) "Networks of innovation: change and meaning in the age of the internet". New York: Oxford University Press.
69. Ulijn, J. & Brown, T.E., (Eds.) (2004) "Innovation, entrepreneurship and culture: the interaction between technology and economic growth". Cheltenham: Edward Elgar Publications.
70. Virkkala, S. (2007) "Innovation and networking in peripheral areas: a case study of emergence and change in rural manufacturing". *European Planning Studies*, Vol. 15, No.4, pp. 511-529.
71. von Hippel, E. (1988) "The Sources of Innovation". New York: Oxford University Press
72. von Tunzelmann, N. & Acha, V. (2005) "Innovation in "Low Tech" Industries". In Fagerberg *et al.* (Eds.) (2005) *The Oxford handbook of innovation*, New York, Oxford University press